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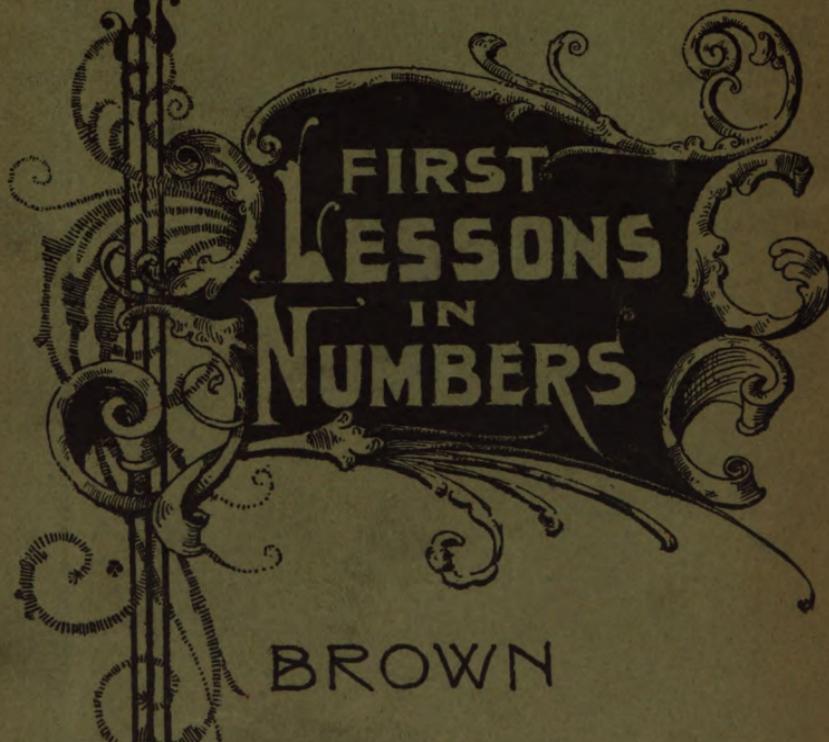
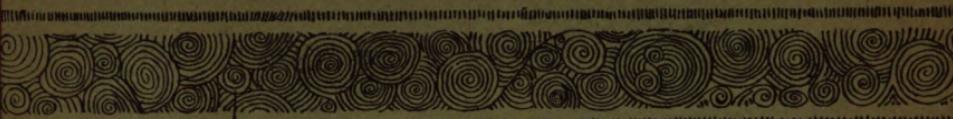
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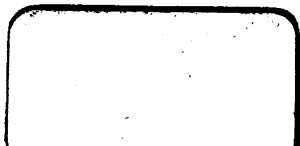


FIRST
LESSONS
IN
NUMBERS

BROWN



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FIRST LESSONS IN NUMBERS:

BY THE

NATURAL METHOD.

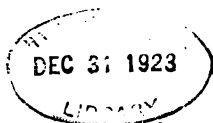
BY

JOHN F. BROWN.

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C. J. PETERS & SON
TYPE-SETTERS AND ELECTROTYPERS
145 HIGH STREET, BOSTON

PREFACE.

THIS book is intended to furnish a course of study in arithmetic for young children, either at home or in school. As its title indicates, the exercises here outlined are meant to be the very first lessons in numbers that the child is to have. The plan here adopted is diametrically opposed to the so-called "inductive" method, or, more properly speaking, the *object* method of Pestalozzi and Colburn, which has become almost universally but not irrevocably established.

It is the fashion to teach arithmetic for a year or two without a text-book, and then to proceed by book something after this manner:—

Henry has one apple in one hand and one apple in the other hand. How many apples has he in both hands?

Sarah had two dolls and her Aunt Maria gave her one more. How many dolls did she then have?

And so on, *ad nauseam*, through a hundred, a hundred and fifty, or two hundred pages.

Two questions naturally occur to the uninitiated:—

First, if this be the instruction of the third and fourth years, of what nature is the more elementary sort of the first and second years? Second, if such insipid stuff be presented to the child under the guise of science, and if the subsequent teaching be what naturally follows from this beginning, what will be the condition of the pupil after he

has advanced in his studies and is supposed to have become somewhat intimately acquainted with this noble science of numbers? This latter question should seem to answer itself. Actual results are what might naturally be expected: there is no adequate return for the time and attention given to arithmetic in public or private schools; proficiency in figuring is not attained.

Some of the reasons why the prevalent methods of teaching have failed have been pointed out in the Introduction to "Numbers, and How to Use Them: by the Natural Method," to which the reader is referred. The prime error of the Pestalozzians is that they put too much stress upon the meaning of individual number names. The main purpose of the science of numbers is to enable one to compute, and computation does not depend upon a comprehension of each number made use of. Indeed, with the exception of small ones, numbers cannot be adequately comprehended. And why should the child be expected to fully grasp the meaning of each number name that is presented to him, when his elders are not called upon to do so with the ones they use? It is not so much numbers, as number, that one needs to comprehend, and, as soon as this fact is appreciated, the supposed necessity for keeping the child upon very small numbers will at once disappear. Closely allied to the error just mentioned, is the notion that our idea of numbers is derived from objects, and that objects must, therefore, be employed to teach numbers; whereas, as is shown in the before-mentioned Introduction, objects merely suggest the necessity for a number scheme, the scheme is developed as a pure science, independent of objects, and is afterwards applied to objects for practical use. Any

method of teaching numbers which does not follow this natural order is unnatural and forced. And thus the end for which the inductive teachers are striving so hard, that of imparting a knowledge of individual numbers, is not only of secondary importance, but this very end is ultimately not so well attained as by following the more obvious and rational procedure.

The two kindred errors just noticed are what make the trouble. There is a violent conflict between the earlier and later methods employed with the same pupil, and, instead of the various parts of the subject being linked together into a simple and harmonious whole, there is everywhere complication, confusion, and contradiction.

The purpose of this little book and its companion is to take the initiative in establishing a new order of things which shall put the science upon a common-sense and rational basis.

“ Ring out the old, ring in the new,
Ring, happy bells, across the snow :
The year is going, let him go ;
Ring out the false, ring in the true.”

To the children of the present generation, to those who were once children, and to the children who are to come, this attempt to illustrate the A B C of the poetry of mathematics is inscribed.

J. F. B.

MAY, 1892.

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FIRST LESSONS IN NUMBERS.

COUNTING TO TWENTY.

One, Two, buckle my shoe;
Three, Four, shut the door;
Five, Six, pick up sticks;
Seven, Eight, lay them straight;
Nine, Ten, a good fat hen;
Eleven, Twelve, who will delve?
Thirteen, Fourteen, boys are courting;
Fifteen, Sixteen, maids are fixing;
Seventeen, Eighteen, all are waiting;
Nineteen, Twenty, my plate's empty;
Please, mamma, give me some dinner.

one	eleven	twenty	ten
two	twelve	nineteen	nine
three	thirteen	eighteen	eight
four	fourteen	seventeen	seven
five	fifteen	sixteen	six
six	sixteen	fifteen	five
seven	seventeen	fourteen	four
eight	eighteen	thirteen	three
nine	nineteen	twelve	two
ten	twenty	eleven	one
			zero

COUNTING TO ONE HUNDRED BY TENS.

zero		one hundred	
ten	sixty	ninety	forty
twenty	seventy	eighty	thirty
thirty	eighty	seventy	twenty
forty	ninety	sixty	ten
fifty	one hundred	fifty	zero

COUNTING TO ONE HUNDRED BY FIVES.

zero	fifty-five	one hundred	forty-five
five	sixty	ninety-five	forty
ten	sixty-five	ninety	thirty-five
fifteen	seventy	eighty-five	thirty
twenty	seventy-five	eighty	twenty-five
twenty-five	eighty	seventy-five	twenty
thirty	eighty-five	seventy	fifteen
thirty-five	ninety	sixty-five	ten
forty	ninety-five	sixty	five
forty-five	one hundred	fifty-five	zero
fifty		fifty	

COUNTING TO ONE HUNDRED BY ONES.

twenty-one	thirty-one	one hundred	eighty-nine
twenty-two	thirty-two	ninety-nine	eighty-eight
twenty-three	thirty-three	ninety-eight	eighty-seven
twenty-four	thirty-four	ninety-seven	eighty-six
twenty-five	thirty-five	ninety-six	eighty-five
twenty-six	thirty-six	ninety-five	eighty-four
twenty-seven	thirty-seven	ninety-four	eighty-three
twenty-eight	thirty-eight	ninety-three	eighty-two
twenty-nine	thirty-nine	ninety-two	eighty-one
thirty	forty	ninety-one	eighty
		ninety	

And so on in a similar manner.

And so on to zero.

Count the fingers on both hands.

Make twenty-one marks on your slate.

NOTE. — After these simple applications, the teacher is especially requested not to make use of objects. In the advanced book, NUMBERS, AND HOW TO USE THEM: BY THE NATURAL METHOD, for which the pupil will be prepared after he has finished this one, the application of number to practical affairs is considered in due course.

FIGURES.

one	1	ten	10	twenty	20
two	2	eleven	11	thirty	30
three	3	twelve	12	forty	40
four	4	thirteen	13	fifty	50
five	5	fourteen	14	sixty	60
six	6	fifteen	15	seventy	70
seven	7	sixteen	16	eighty	80
eight	8	seventeen	17	ninety	90
nine	9	eighteen	18	one hundred	100
zero	0	nineteen	19		

twenty-one	21	twenty-two	22
twenty-two	22	thirty-two	32
twenty-three	23	forty-two	42
twenty-four	24	fifty-two	52
twenty-five	25	sixty-two	62
twenty-six	26	seventy-two	72
twenty-seven	27	eighty-two	82
twenty-eight	28	ninety-two	92
twenty-nine	29		

READ :

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
6	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

75	32	19	98	53	64	76	34	86	39
41	59	91	71	36	46	90	7	40	97
58	57	85	11	66	2	30	28	9	68
92	16	78	93	12	33	8	1	45	79
23	80	49	37	22	56	99	72	63	48
20	61	60	89	81	14	83	13	38	29
65	43	42	25	17	50	47	100	55	73
44	21	82	15	4	74	27	3	67	94
69	88	77	51	31	26	95	24	87	62
84	96	6	10	18	5	52	35	54	70

WRITE IN FIGURES

THE NUMBERS ON PAGES 9 AND 10.

two	fifty-nine	forty-eight
eighty-one	five	four
fifty-five	seventeen	twenty-eight
ninety-one	forty-one	forty-five
twenty	sixty	twenty-two
thirty-six	eighty-five	seven
fifty-six	thirty-two	thirty-eight
twenty-three	eighteen	eighty-nine
nine	ten	fifty-four
forty-nine	ninety-nine	ninety-six
thirteen	twelve	fifty-one
twenty-nine	thirty	sixty-one
seventy-four	seventy-one	ninety-five
nineteen	eighty	forty-four
ninety	seventy-eight	one
seventy-two	sixty-four	sixty-eight
fifty-seven	ninety-two	eighty-seven
forty	eighty-six	seventy-five
eighty-eight	seventy-three	sixty-three
sixty-seven	thirty-one	forty-six
eighty-two	sixty-five	eleven
forty-seven	sixty-nine	twenty-seven
thirty-five	seventy-seven	sixteen

twenty-one	ninety-three	seventy-nine
thirty-seven	twenty-five	fourteen
fifty	ninety-seven	forty-three
sixty-six	thirty-three	twenty-four
thirty-nine	eight	three
eighty-four	one hundred	forty-two
seventy	thirty-four	fifty-eight
six	fifteen	sixty-two
seventy-six	twenty-six	ninety-four
ninety-eight	fifty-three	eighty-three
		fifty-two

COUNTING FROM ZERO
BY TWOS.

0	20
2	18
4	16
6	14
8	12
10	10
12	8
14	6
16	4
18	2
20	0

COUNTING FROM ZERO
BY THREES.

0	30
3	27
6	24
9	21
12	18
15	15
18	12
21	9
24	6
27	3
30	0

COUNTING FROM ZERO
BY FOURS.

0	40
4	36
8	32
12	28
16	24
20	20
24	16
28	12
32	8
36	4
40	0

COUNTING BY TWOS. -
Beginning with 1.

1	21
3	19
5	17
7	15
9	13
11	11
13	9
15	7
17	5
19	3
21	1

COUNTING BY THREES.
Beginning with 1.

1	31
4	28
7	25
10	22
13	19
16	16
19	13
22	10
25	7
28	4
31	1

Beginning with 2.

2	32
5	29
8	26
11	23
14	20
17	17
20	14
23	11
26	8
29	5
32	2

COUNTING FORWARD, OR ADDITION.

BY ONES.

1	2	3	4
---	---	---	---

1 and 1 are 2

2 and 1 are 3

3 and 1 are 4

5 and 1 are

7 and 1 are

9 and 1 are

4 and 1 are

8 and 1 are

6 and 1 are

BY TENS.

10	20	30
----	----	----

10 and 10 are 20

20 and 10 are 30

40 and 10 are

80 and 10 are

30 and 10 are

60 and 10 are

50 and 10 are

90 and 10 are

70 and 10 are

BY FIVES.

5	10	15
---	----	----

5 and 5 are 10

10 and 5 are 15

40 and 5 are

30 and 5 are

45 and 5 are

20 and 5 are

15 and 5 are

25 and 5 are

35 and 5 are

BY TWOS.

2	4	6
---	---	---

2 and 2 are 4

4 and 2 are 6

8 and 2 are

6 and 2 are

18 and 2 are

12 and 2 are

16 and 2 are

14 and 2 are

10 and 2 are

1	3	5
---	---	---

1 and 2 are 3

3 and 2 are 5

15 and 2 are

11 and 2 are

5 and 2 are

9 and 2 are

13 and 2 are

19 and 2 are

7 and 2 are

17 and 2 are

BY THREES.

3	6	9	1	4	7	2	5	8
3 and 3 are 6			1 and 3 are 4			2 and 3 are 5		
6 and 3 are 9			4 and 3 are 7			5 and 3 are 8		
27 and 3 are			13 and 3 are			14 and 3 are		
9 and 3 are			22 and 3 are			8 and 3 are		
15 and 3 are			28 and 3 are			23 and 3 are		
24 and 3 are			16 and 3 are			17 and 3 are		
18 and 3 are			7 and 3 are			29 and 3 are		
12 and 3 are			19 and 3 are			20 and 3 are		
21 and 3 are			10 and 3 are			11 and 3 are		
			25 and 3 are			26 and 3 are		

BY FOURS.

4	8	12
4 and 4 are 8		
8 and 4 are 12		
28 and 4 are		
36 and 4 are		
16 and 4 are		
24 and 4 are		
12 and 4 are		
32 and 4 are		
20 and 4 are		

COUNTING BACKWARD, OR SUBTRACTION.

BY ONES.

10	9	8	7
10 less 1 is 9		5 less 1 is	
9 less 1 is 8		1 less 1 is	
8 less 1 is 7		3 less 1 is	
4 less 1 is		6 less 1 is	
7 less 1 is		2 less 1 is	

BY TENS.

100 90 80

100 less 10 is 90

90 less 10 is 80

80 less 10 is

10 less 10 is

70 less 10 is

40 less 10 is

60 less 10 is

20 less 10 is

30 less 10 is

50 less 10 is

BY FIVES.

50 45 40

50 less 5 is 45

45 less 5 is 40

40 less 5 is

20 less 5 is

35 less 5 is

25 less 5 is

5 less 5 is

15 less 5 is

30 less 5 is

10 less 5 is

BY TWOS.

20 18 16

20 less 2 is 18

18 less 2 is 16

4 less 2 is

10 less 2 is

6 less 2 is

16 less 2 is

12 less 2 is

2 less 2 is

8 less 2 is

14 less 2 is

21 19 17

21 less 2 is 19

19 less 2 is 17

15 less 2 is

9 less 2 is

17 less 2 is

3 less 2 is

7 less 2 is

11 less 2 is

13 less 2 is

5 less 2 is

BY THREES.

30 27 24

30 less 3 is 27

27 less 3 is 24

9 less 3 is

21 less 3 is

12 less 3 is

3 less 3 is

24 less 3 is

15 less 3 is

6 less 3 is

18 less 3 is

31 28 25

31 less 3 is 28

28 less 3 is 25

19 less 3 is

4 less 3 is

13 less 3 is

16 less 3 is

22 less 3 is

7 less 3 is

10 less 3 is

25 less 3 is

32 29 26

32 less 3 is 29

29 less 3 is 26

8 less 3 is

14 less 3 is

5 less 3 is

11 less 3 is

23 less 3 is

17 less 3 is

20 less 3 is

26 less 3 is

BY FOURS.

40	36	32
40 less 4 is 36		32 less 4 is
36 less 4 is 32		24 less 4 is
8 less 4 is		12 less 4 is
28 less 4 is		16 less 4 is
4 less 4 is		20 less 4 is

THE SIGNS OF ADDITION, SUBTRACTION, AND EQUALITY.

- $2 + 2 = 4$. This is read *two plus two equals four*, and means the same as 2 and 2 are 4.
- $4 + 2 = 6$. This is read *four plus two equals six*, and means the same as 4 and 2 are 6.
- $6 - 2 = 4$. This is read *six minus two equals four*, and means the same as 6 less 2 is 4.
- $4 - 2 = 2$. This is read *four minus two equals two*, and means the same as 4 less 2 is 2.

Write each of the previous exercises in counting, using the signs +, -, and =, and read each exercise from the written work.

COUNTING BY FOURS.

- Beginning with 1, count by fours to 41 and backward to 1.
- Beginning with 2, count by fours to 42 and backward to 2.
- Beginning with 3, count by fours to 43 and backward to 3.

Thus:

1	41	2	42	3	43
5	37	6	38	7	39
9	33	10	34	11	35
13	29	14	30	15	31
17	25	18	26	19	27
21	21	22	22	23	23
25	17	26	18	27	19
29	13	30	14	31	15
33	9	34	10	35	11
37	5	38	6	39	7
41	1	42	2	43	3

EXERCISES IN ADDITION AND SUBTRACTION.

$$\begin{array}{rcl}
4 + 2 + 3 + 1 = & 3 + 1 + 4 + 2 - 3 - 1 - 2 = & \\
5 + 3 - 4 + 2 = & 5 + 2 + 4 + 3 = & \\
17 - 4 - 2 - 3 = & 29 - 3 - 4 - 1 = & \\
42 - 4 + 3 = & 46 + 2 + 4 + 3 = & \\
28 + 2 + 5 = & 18 + 4 - 3 - 2 = & \\
40 - 10 - 5 = & 27 - 4 - 2 - 3 + 1 + 4 - 3 = & \\
17 + 3 + 4 + 1 - 2 - 4 + 3 - 2 - 1 + 4 - & & \\
& 2 - 4 - 3 + 2 = & \\
56 + 3 - 4 - 2 - 1 - 3 + 4 - 2 - 3 - 4 - & & \\
& 1 + 2 - 4 + 3 = & \\
32 - 4 - 2 + 3 - 4 - 1 + 2 - 3 - 4 + 1 + & & \\
& 2 - 3 + 2 - 4 = & \\
3 + 3 + 3 + 3 + 3 + 3 + 3 - 2 - 2 - 2 - & & \\
& 2 - 2 - 2 - 2 = & \\
26 - 2 - 3 - 4 - 4 - 3 - 2 + 4 + 4 + 3 + & & \\
& 2 + 3 + 4 + 4 = &
\end{array}$$

MULTIPLICATION.

$$2 \quad 4 \quad 6$$

$$2 + 2 + 2 = 6 \quad \text{Three 2's} = 6 \quad \text{Or, 3 times 2} = 6$$

Instead of the word *times* we may use the sign \times

$$3 \times 2 = 6$$

NOTE. — Attention may now be called to the Multiplication Table on page 34.

$2 \times 2 =$	$2 \times 3 =$	$2 \times 4 =$	$2 \times 5 =$	$2 \times 10 =$
$3 \times 2 =$	$3 \times 3 =$	$3 \times 4 =$	$3 \times 5 =$	$3 \times 10 =$
$4 \times 2 =$	$4 \times 3 =$	$4 \times 4 =$	$4 \times 5 =$	$4 \times 10 =$
$5 \times 2 =$	$5 \times 3 =$	$5 \times 4 =$	$5 \times 5 =$	$5 \times 10 =$
$6 \times 2 =$	$6 \times 3 =$	$6 \times 4 =$	$6 \times 5 =$	$6 \times 10 =$
$7 \times 2 =$	$7 \times 3 =$	$7 \times 4 =$	$7 \times 5 =$	$7 \times 10 =$
$8 \times 2 =$	$8 \times 3 =$	$8 \times 4 =$	$8 \times 5 =$	$8 \times 10 =$
$9 \times 2 =$	$9 \times 3 =$	$9 \times 4 =$	$9 \times 5 =$	$9 \times 10 =$
$10 \times 2 =$	$10 \times 3 =$	$10 \times 4 =$	$10 \times 5 =$	$10 \times 10 =$
$2 \times 3 =$	$4 \times 2 =$	$3 \times 5 =$		
$3 \times 2 =$	$2 \times 4 =$	$5 \times 3 =$		

DIVISION.

$$7 \quad 5 \quad 3 \quad 1$$

$$7 - 2 - 2 - 2 = 1.$$

7 contains 2 three times and 1 over.

Or 7 divided by 2 = 3 and 1 remainder.

Instead of using the word *divided* we may use the sign \div .
 $7 \div 2 = 3$ and 1 remainder or 1 over. The dots may be omitted from the sign of division, the two numbers taking the place of the dots. $\frac{7}{2}$ is read *seven divided by two* and means the same as $7 \div 2$.

NOTE. — In this book, the line —, with a number above and a number below, should always be read *divided by*.

$\frac{4}{2} =$	$\frac{6}{3} =$	$\frac{8}{4} =$	$\frac{10}{5} =$	$\frac{20}{10} =$
$\frac{6}{2} =$	$\frac{9}{3} =$	$\frac{12}{4} =$	$\frac{15}{5} =$	$\frac{30}{10} =$
$\frac{8}{2} =$	$\frac{12}{3} =$	$\frac{16}{4} =$	$\frac{20}{5} =$	$\frac{40}{10} =$
$\frac{10}{2} =$	$\frac{15}{3} =$	$\frac{20}{4} =$	$\frac{25}{5} =$	$\frac{50}{10} =$
$\frac{12}{2} =$	$\frac{18}{3} =$	$\frac{24}{4} =$	$\frac{30}{5} =$	$\frac{60}{10} =$
$\frac{14}{2} =$	$\frac{21}{3} =$	$\frac{28}{4} =$	$\frac{35}{5} =$	$\frac{70}{10} =$
$\frac{16}{2} =$	$\frac{24}{3} =$	$\frac{32}{4} =$	$\frac{40}{5} =$	$\frac{80}{10} =$
$\frac{18}{2} =$	$\frac{27}{3} =$	$\frac{36}{4} =$	$\frac{45}{5} =$	$\frac{90}{10} =$
$\frac{20}{2} =$	$\frac{30}{3} =$	$\frac{40}{4} =$	$\frac{50}{5} =$	$\frac{100}{10} =$

COUNTING BY FIVES.

1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51.
 51, 46, 41, 36, 31, 26, 21, 16, 11, 6, 1.

$$1 + 10 \times 5 = 51 \quad \left| \quad \frac{51}{5} = 10 \text{ and } 1 \text{ remainder.} \right.$$

$$51 - 10 \times 5 = 1 \quad \left| \quad \frac{51}{10} = 5 \text{ and } 1 \text{ remainder.} \right.$$

2, 7, 12, 17, 22, 27, 32, 37, 42, 47, 52.
 52, 47, 42, 37, 32, 27, 22, 17, 12, 7, 2.

$$2 + 10 \times 5 = \quad \left| \quad \frac{52}{5} = \right.$$

$$52 - 10 \times 5 = \quad \left| \quad \frac{52}{10} = \right.$$

3, 8, 13, 18, 23, 28, 33, 38, 43, 48, 53.
 53, 48, 43, 38, 33, 28, 23, 18, 13, 8, 3.

$$\frac{53}{5} = \quad \frac{53}{10} =$$

4, 9, 14, 19, 24, 29, 34, 39, 44, 49, 54.
 54, 49, 44, 39, 34, 29, 24, 19, 14, 9, 4.

$$54 \div 5 = \quad 54 \div 10 =$$

$$43 + 5 = \quad 31 - 5 = \quad 56 + 5 =$$

$$32 + 5 = \quad 28 - 5 = \quad 81 - 5 =$$

$$14 + 5 = \quad 44 - 5 = \quad 67 + 5 =$$

$$27 + 5 = \quad 17 - 5 = \quad 92 - 5 =$$

$$38 + 5 = \quad 13 - 5 = \quad 58 + 5 =$$

$$6 + 5 = \quad 42 - 5 = \quad 73 - 5 =$$

$$41 + 5 = \quad 39 - 5 = \quad 69 + 5 =$$

$$29 + 5 = \quad 26 - 5 = \quad 84 - 5 =$$

COUNTING BY TENS.

1, 11, 21, 31, 41, 51, 61, 71, 81, 91.
 91, 81, 71, 61, 51, 41, 31, 21, 11, 1.

2, 12, 22, 32, 42, 52, 62, 72, 82, 92.

92, 82, 72, 62, 52, 42, 32, 22, 12, 2.

3, 13, 23, 33, 43, 53, 63, 73, 83, 93.

93, 83, 73, 63, 53, 43, 33, 23, 13, 3.

$$46 + 10 = \quad 59 + 10 = \quad 65 - 10 = \quad 59 - 10 =$$

$$37 + 10 = \quad 85 + 10 = \quad 78 - 10 = \quad 94 - 10 =$$

$$24 + 10 = \quad 78 + 10 = \quad 46 - 10 = \quad 87 - 10 =$$

EXERCISES IN MULTIPLICATION AND DIVISION.

$$5 \times 2 = \quad 4 \times 3 = \quad 3 \times 4 = \quad 2 \times 5 = \quad 8 \times 10 =$$

$$8 \times 2 = \quad 2 \times 3 = \quad 7 \times 4 = \quad 6 \times 5 = \quad 5 \times 10 =$$

$$3 \times 2 = \quad 6 \times 3 = \quad 5 \times 4 = \quad 9 \times 5 = \quad 2 \times 10 =$$

$$6 \times 2 = \quad 3 \times 3 = \quad 2 \times 4 = \quad 8 \times 5 = \quad 4 \times 10 =$$

$$2 \times 2 = \quad 8 \times 3 = \quad 9 \times 4 = \quad 10 \times 5 = \quad 3 \times 10 =$$

$$10 \times 2 = \quad 10 \times 3 = \quad 8 \times 4 = \quad 7 \times 5 = \quad 10 \times 10 =$$

$$7 \times 2 = \quad 9 \times 3 = \quad 10 \times 4 = \quad 4 \times 5 = \quad 6 \times 10 =$$

$$4 \times 2 = \quad 7 \times 3 = \quad 4 \times 4 = \quad 5 \times 5 = \quad 9 \times 10 =$$

$$9 \times 2 = \quad 5 \times 3 = \quad 6 \times 4 = \quad 3 \times 5 = \quad 7 \times 10 =$$

$$\frac{12}{2} = \quad \frac{15}{3} = \quad \frac{12}{4} = \quad \frac{45}{5} = \quad \frac{70}{10} =$$

$$\frac{6}{2} = \quad \frac{6}{3} = \quad \frac{32}{4} = \quad \frac{20}{5} = \quad \frac{100}{10} =$$

$$\frac{10}{2} = \quad \frac{21}{3} = \quad \frac{16}{4} = \quad \frac{40}{5} = \quad \frac{30}{10} =$$

$$\frac{4}{2} = \quad \frac{12}{3} = \quad \frac{36}{4} = \quad \frac{25}{5} = \quad \frac{20}{10} =$$

$$\frac{20}{2} = \quad \frac{24}{3} = \quad \frac{28}{4} = \quad \frac{30}{5} = \quad \frac{80}{10} =$$

$$\frac{16}{2} = \quad \frac{30}{3} = \quad \frac{40}{4} = \quad \frac{50}{5} = \quad \frac{50}{10} =$$

$$\frac{18}{2} = \quad \frac{9}{3} = \quad \frac{8}{4} = \quad \frac{10}{5} = \quad \frac{90}{10} =$$

$$\frac{14}{2} = \quad \frac{27}{3} = \quad \frac{24}{4} = \quad \frac{35}{5} = \quad \frac{60}{10} =$$

$$\frac{8}{2} = \quad \frac{18}{3} = \quad \frac{20}{4} = \quad \frac{15}{5} = \quad \frac{40}{10} =$$

$$\begin{array}{rclcl}
 9 \times 4 = & 6 \times 5 = & 3 \times 4 = & 6 \times 2 = & 2 \times 10 = \\
 6 \times 10 = & 10 \times 2 = & 2 \times 3 = & 10 \times 5 = & 9 \times 5 = \\
 7 \times 2 = & 7 \times 5 = & 9 \times 10 = & 4 \times 4 = & 2 \times 2 = \\
 5 \times 4 = & 10 \times 4 = & 4 \times 3 = & 7 \times 3 = & 6 \times 4 = \\
 4 \times 5 = & 9 \times 2 = & 5 \times 2 = & 8 \times 10 = & 3 \times 5 = \\
 7 \times 10 = & 4 \times 10 = & 8 \times 4 = & 5 \times 5 = & 10 \times 10 = \\
 8 \times 3 = & 6 \times 3 = & 3 \times 3 = & 4 \times 2 = & 2 \times 4 = \\
 2 \times 5 = & 8 \times 2 = & 3 \times 10 = & 7 \times 4 = & 10 \times 3 = \\
 5 \times 3 = & 5 \times 10 = & 9 \times 3 = & 3 \times 2 = & 8 \times 5 =
 \end{array}$$

$$\frac{47}{5} = \quad \frac{11}{3} = \quad \frac{95}{10} = \quad \frac{24}{5} = \quad \frac{42}{4} =$$

$$\frac{13}{2} = \quad \frac{19}{5} = \quad \frac{21}{4} = \quad \frac{46}{10} = \quad \frac{39}{10} =$$

$$\frac{18}{4} = \quad \frac{14}{4} = \quad \frac{15}{2} = \quad \frac{39}{4} = \quad \frac{8}{3} =$$

$$\frac{77}{10} = \quad \frac{81}{10} = \quad \frac{28}{3} = \quad \frac{17}{2} = \quad \frac{33}{5} =$$

$$\frac{20}{3} = \quad \frac{53}{5} = \quad \frac{22}{5} = \quad \frac{28}{5} = \quad \frac{62}{10} =$$

$$\frac{31}{5} = \quad \frac{9}{2} = \quad \frac{31}{4} = \quad \frac{26}{4} = \quad \frac{22}{3} =$$

$$\frac{5}{2} = \quad \frac{17}{3} = \quad \frac{32}{3} = \quad \frac{58}{10} = \quad \frac{26}{5} =$$

$$\frac{25}{3} = \quad \frac{33}{4} = \quad \frac{13}{10} = \quad \frac{7}{2} = \quad \frac{21}{2} =$$

$$\frac{24}{10} = \quad \frac{19}{2} = \quad \frac{11}{2} = \quad \frac{13}{3} = \quad \frac{11}{4} =$$

COUNTING BY SIXES.

Repeat each column downward and then upward.

0	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31	32	33	34	35
36	37	38	39	40	41
42	43	44	45	46	47
48	49	50	51	52	53
54	55	56	57	58	59
60	61	62	63	64	65

$2 \times 6 =$	$\frac{12}{6} =$	
$3 \times 6 =$	$\frac{18}{6} =$	$\frac{42}{6} =$
$4 \times 6 =$	$\frac{24}{6} =$	$\frac{48}{6} =$
$5 \times 6 =$	$\frac{30}{6} =$	$\frac{54}{6} =$
$6 \times 6 =$	$\frac{36}{6} =$	$\frac{60}{6} =$
$7 \times 6 =$	$\frac{42}{6} =$	$\frac{66}{6} =$
$8 \times 6 =$	$\frac{48}{6} =$	$\frac{72}{6} =$
$9 \times 6 =$	$\frac{54}{6} =$	$\frac{78}{6} =$
$10 \times 6 =$	$\frac{60}{6} =$	$\frac{84}{6} =$

$\frac{27}{6} = 4 \frac{3}{6}$. The 2 remainder may be expressed $\frac{3}{6}$. So, $\frac{27}{6} = 4 \frac{3}{6}$, one and two divided by six, or one and two remainder.

$$\frac{27}{6} = 4 \frac{3}{6}.$$

$6 \times 6 =$	$7 \times 6 =$	$10 \times 6 =$	$\frac{48}{6} =$	$\frac{60}{6} =$	$\frac{54}{6} =$
$3 \times 6 =$	$4 \times 6 =$	$2 \times 6 =$	$\frac{18}{6} =$	$\frac{12}{6} =$	$\frac{24}{6} =$
$9 \times 6 =$	$8 \times 6 =$	$5 \times 6 =$	$\frac{30}{6} =$	$\frac{36}{6} =$	$\frac{42}{6} =$

$24 + 6 =$	$46 + 6 =$	$28 - 6 =$	$59 - 6 =$
$49 + 6 =$	$5 + 6 =$	$52 - 6 =$	$45 - 6 =$
$7 + 6 =$	$51 + 6 =$	$14 - 6 =$	$24 - 6 =$
$31 + 6 =$	$30 + 6 =$	$34 - 6 =$	$10 - 6 =$
$57 + 6 =$	$9 + 6 =$	$49 - 6 =$	$33 - 6 =$
$16 + 6 =$	$48 + 6 =$	$11 - 6 =$	$55 - 6 =$
$41 + 6 =$	$2 + 6 =$	$26 - 6 =$	$63 - 6 =$
$55 + 6 =$	$33 + 6 =$	$58 - 6 =$	$38 - 6 =$
$4 + 6 =$	$42 + 6 =$	$20 - 6 =$	$41 - 6 =$
$15 + 6 =$	$10 + 6 =$	$43 - 6 =$	$32 - 6 =$
$27 + 6 =$	$34 + 6 =$	$7 - 6 =$	$15 - 6 =$
$43 + 6 =$	$23 + 6 =$	$31 - 6 =$	$60 - 6 =$
$19 + 6 =$	$6 + 6 =$	$18 - 6 =$	$47 - 6 =$
$1 + 6 =$	$50 + 6 =$	$40 - 6 =$	$22 - 6 =$
$58 + 6 =$	$18 + 6 =$	$57 - 6 =$	$36 - 6 =$
$17 + 6 =$	$37 + 6 =$	$16 - 6 =$	$21 - 6 =$
$35 + 6 =$	$20 + 6 =$	$29 - 6 =$	$44 - 6 =$
$3 + 6 =$	$39 + 6 =$	$65 - 6 =$	$62 - 6 =$
$28 + 6 =$	$14 + 6 =$	$8 - 6 =$	$13 - 6 =$
$12 + 6 =$	$38 + 6 =$	$51 - 6 =$	$23 - 6 =$
$59 + 6 =$	$40 + 6 =$	$19 - 6 =$	$56 - 6 =$
$45 + 6 =$	$21 + 6 =$	$30 - 6 =$	$42 - 6 =$
$13 + 6 =$	$56 + 6 =$	$61 - 6 =$	$9 - 6 =$
$52 + 6 =$	$22 + 6 =$	$48 - 6 =$	$50 - 6 =$
$11 + 6 =$	$36 + 6 =$	$12 - 6 =$	$25 - 6 =$
$44 + 6 =$	$25 + 6 =$	$53 - 6 =$	$17 - 6 =$
$29 + 6 =$	$54 + 6 =$	$64 - 6 =$	$54 - 6 =$
$8 + 6 =$	$32 + 6 =$	$35 - 5 =$	$46 - 6 =$
$47 + 6 =$	$26 + 6 =$	$27 - 6 =$	$37 - 6 =$
$53 + 6 =$		$6 - 6 =$	$39 - 6 =$

$\frac{30}{6} =$	$\frac{9}{6} =$	$\frac{29}{6} =$	$\frac{17}{6} =$	$\frac{46}{6} =$	$\frac{38}{6} =$
$\frac{15}{6} =$	$\frac{54}{6} =$	$\frac{62}{6} =$	$\frac{34}{6} =$	$\frac{14}{6} =$	$\frac{56}{6} =$
$\frac{39}{6} =$	$\frac{32}{6} =$	$\frac{24}{6} =$	$\frac{10}{6} =$	$\frac{57}{6} =$	$\frac{41}{6} =$
$\frac{55}{6} =$	$\frac{11}{6} =$	$\frac{42}{6} =$	$\frac{52}{6} =$	$\frac{19}{6} =$	$\frac{23}{6} =$
$\frac{13}{6} =$	$\frac{65}{6} =$	$\frac{35}{6} =$	$\frac{8}{6} =$	$\frac{61}{6} =$	$\frac{43}{6} =$
$\frac{49}{6} =$	$\frac{59}{6} =$	$\frac{25}{6} =$	$\frac{36}{6} =$	$\frac{53}{6} =$	$\frac{37}{6} =$
$\frac{28}{6} =$	$\frac{33}{6} =$	$\frac{44}{6} =$	$\frac{40}{6} =$	$\frac{22}{6} =$	$\frac{26}{6} =$
$\frac{60}{6} =$	$\frac{6}{6} =$	$\frac{31}{6} =$	$\frac{58}{6} =$	$\frac{64}{6} =$	$\frac{18}{6} =$
$\frac{7}{6} =$	$\frac{51}{6} =$	$\frac{45}{6} =$	$\frac{12}{6} =$	$\frac{21}{6} =$	$\frac{47}{6} =$
$\frac{63}{6} =$	$\frac{27}{6} =$	$\frac{20}{6} =$	$\frac{48}{6} =$	$\frac{50}{6} =$	$\frac{16}{6} =$

COUNTING BY SEVENS.

0	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	36	37	38	39	40	41
42	43	44	45	46	47	48
49	50	51	52	53	54	55
56	57	58	59	60	61	62
63	64	65	66	67	68	69
70	71	72	73	74	75	76

$2 \times 7 =$	$\frac{14}{7} =$	
$3 \times 7 =$	$\frac{21}{7} =$	$\frac{49}{7} =$
$4 \times 7 =$	$\frac{28}{7} =$	$\frac{56}{7} =$
$5 \times 7 =$	$\frac{35}{7} =$	$\frac{63}{7} =$
$6 \times 7 =$	$\frac{42}{7} =$	$\frac{70}{7} =$
$7 \times 7 =$		
$8 \times 7 =$		
$9 \times 7 =$		
$10 \times 7 =$		

$6 \times 7 =$	$9 \times 7 =$	$8 \times 7 =$	$\frac{35}{7} =$	$\frac{42}{7} =$	$\frac{49}{7} =$
$2 \times 7 =$	$7 \times 7 =$	$3 \times 7 =$	$\frac{21}{7} =$	$\frac{70}{7} =$	$\frac{63}{7} =$
$5 \times 7 =$	$10 \times 7 =$	$4 \times 7 =$	$\frac{56}{7} =$	$\frac{14}{7} =$	$\frac{28}{8} =$

$34 + 7 =$	$10 + 7 =$	$38 + 7 =$	$51 + 7 =$
$45 + 7 =$	$68 + 7 =$	$14 + 7 =$	$16 + 7 =$
$13 + 7 =$	$31 + 7 =$	$56 + 7 =$	$40 + 7 =$
$64 + 7 =$	$50 + 7 =$	$42 + 7 =$	$5 + 7 =$
$32 + 7 =$	$35 + 7 =$	$1 + 7 =$	$44 + 7 =$
$9 + 7 =$	$66 + 7 =$	$15 + 7 =$	$36 + 7 =$
$63 + 7 =$	$57 + 7 =$	$48 + 7 =$	$8 + 7 =$
$41 + 7 =$	$3 + 7 =$	$59 + 7 =$	$46 + 7 =$
$58 + 7 =$	$30 + 7 =$	$7 + 7 =$	$17 + 7 =$
$67 + 7 =$	$62 + 7 =$	$29 + 7 =$	$6 + 7 =$
$4 + 7 =$	$12 + 7 =$	$60 + 7 =$	$49 + 7 =$
$61 + 7 =$	$33 + 7 =$	$11 + 7 =$	$54 + 7 =$
$53 + 7 =$	$65 + 7 =$	$52 + 7 =$	$39 + 7 =$
$2 + 7 =$	$37 + 7 =$	$69 + 7 =$	$43 + 7 =$
$47 + 7 =$	$18 + 7 =$	$55 + 7 =$	$19 + 7 =$

61 - 7 =	11 - 7 =	8 - 7 =	46 - 7 =
14 - 7 =	36 - 7 =	35 - 7 =	69 - 7 =
73 - 7 =	68 - 7 =	48 - 7 =	57 - 7 =
10 - 7 =	74 - 7 =	64 - 7 =	32 - 7 =
38 - 7 =	19 - 7 =	70 - 7 =	55 - 7 =
52 - 7 =	41 - 7 =	13 - 7 =	37 - 7 =
76 - 7 =	7 - 7 =	42 - 7 =	44 - 7 =
9 - 7 =	58 - 7 =	63 - 7 =	65 - 7 =
47 - 7 =	39 - 7 =	50 - 7 =	51 - 7 =
66 - 7 =	60 - 7 =	16 - 7 =	30 - 7 =
18 - 7 =	12 - 7 =	34 - 7 =	56 - 7 =
43 - 7 =	45 - 7 =	72 - 7 =	33 - 7 =
62 - 7 =	31 - 7 =	17 - 7 =	53 - 7 =
71 - 7 =	67 - 7 =	49 - 7 =	40 - 7 =
15 - 7 =	54 - 7 =	75 - 7 =	59 - 7 =

$\frac{37}{7} =$	$\frac{16}{7} =$	$\frac{72}{7} =$	$\frac{56}{7} =$	$\frac{13}{7} =$	$\frac{38}{7} =$
$\frac{60}{7} =$	$\frac{74}{7} =$	$\frac{33}{7} =$	$\frac{67}{7} =$	$\frac{7}{7} =$	$\frac{61}{7} =$
$\frac{11}{7} =$	$\frac{36}{7} =$	$\frac{69}{7} =$	$\frac{9}{7} =$	$\frac{30}{7} =$	$\frac{35}{7} =$
$\frac{73}{7} =$	$\frac{59}{7} =$	$\frac{31}{7} =$	$\frac{70}{7} =$	$\frac{46}{7} =$	$\frac{48}{7} =$
$\frac{14}{7} =$	$\frac{32}{7} =$	$\frac{40}{7} =$	$\frac{39}{7} =$	$\frac{68}{7} =$	$\frac{57}{7} =$
$\frac{52}{7} =$	$\frac{66}{7} =$	$\frac{71}{7} =$	$\frac{75}{7} =$	$\frac{44}{7} =$	$\frac{7}{7} =$
$\frac{47}{7} =$	$\frac{54}{7} =$	$\frac{18}{7} =$	$\frac{12}{7} =$	$\frac{10}{7} =$	$\frac{45}{7} =$
$\frac{8}{7} =$	$\frac{42}{7} =$	$\frac{53}{7} =$	$\frac{63}{7} =$	$\frac{76}{7} =$	$\frac{64}{7} =$
$\frac{41}{7} =$	$\frac{19}{7} =$	$\frac{62}{7} =$	$\frac{34}{7} =$	$\frac{51}{7} =$	$\frac{43}{7} =$
$\frac{17}{7} =$	$\frac{65}{7} =$	$\frac{55}{7} =$	$\frac{58}{7} =$	$\frac{49}{7} =$	$\frac{15}{7} =$

COUNTING BY EIGHTS.

0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71
72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87

$2 \times 8 =$	$\frac{16}{8} =$	
$3 \times 8 =$		$\frac{56}{8} =$
$4 \times 8 =$	$\frac{24}{8} =$	
$5 \times 8 =$		$\frac{64}{8} =$
$6 \times 8 =$	$\frac{32}{8} =$	
$7 \times 8 =$		$\frac{72}{8} =$
$8 \times 8 =$	$\frac{40}{8} =$	
$9 \times 8 =$		$\frac{80}{8} =$
$10 \times 8 =$	$\frac{48}{8} =$	

$6 \times 8 =$	$8 \times 8 =$	$9 \times 8 =$	$\frac{64}{8} =$	$\frac{32}{8} =$	$\frac{48}{8} =$
$2 \times 8 =$	$7 \times 8 =$	$4 \times 8 =$	$\frac{40}{8} =$	$\frac{72}{8} =$	$\frac{80}{8} =$
$5 \times 8 =$	$3 \times 8 =$	$10 \times 8 =$	$\frac{56}{8} =$	$\frac{16}{8} =$	$\frac{24}{8} =$

53 + 8 =	7 + 8 =	56 - 8 =	15 - 8 =
19 + 8 =	65 + 8 =	23 - 8 =	86 - 8 =
77 + 8 =	23 + 8 =	78 - 8 =	24 - 8 =
8 + 8 =	9 + 8 =	10 - 8 =	75 - 8 =
26 + 8 =	70 + 8 =	17 - 8 =	87 - 8 =
57 + 8 =	28 + 8 =	54 - 8 =	9 - 8 =
29 + 8 =	17 + 8 =	69 - 8 =	21 - 8 =
14 + 8 =	2 + 8 =	8 - 8 =	55 - 8 =
22 + 8 =	25 + 8 =	22 - 8 =	66 - 8 =
64 + 8 =	61 + 8 =	53 - 8 =	83 - 8 =
74 + 8 =	73 + 8 =	67 - 8 =	68 - 8 =
51 + 8 =	16 + 8 =	12 - 8 =	29 - 8 =
20 + 8 =	59 + 8 =	25 - 8 =	60 - 8 =
5 + 8 =	1 + 8 =	58 - 8 =	73 - 8 =
63 + 8 =	72 + 8 =	27 - 8 =	18 - 8 =
79 + 8 =	69 + 8 =	16 - 8 =	79 - 8 =
55 + 8 =	10 + 8 =	85 - 8 =	72 - 8 =
11 + 8 =	56 + 8 =	59 - 8 =	26 - 8 =
67 + 8 =	18 + 8 =	77 - 8 =	64 - 8 =
76 + 8 =	52 + 8 =	61 - 8 =	80 - 8 =
3 + 8 =	61 + 8 =	82 - 8 =	62 - 8 =
21 + 8 =	27 + 8 =	14 - 8 =	20 - 8 =
50 + 8 =	12 + 8 =	65 - 8 =	81 - 8 =
62 + 8 =	58 + 8 =	19 - 8 =	52 - 8 =
13 + 8 =	15 + 8 =	50 - 8 =	70 - 8 =
24 + 8 =	71 + 8 =	74 - 8 =	57 - 8 =
68 + 8 =	4 + 8 =	28 - 8 =	11 - 8 =
75 + 8 =	54 + 8 =	84 - 8 =	63 - 8 =
6 + 8 =	66 + 8 =	13 - 8 =	76 - 8 =
49 + 8 =	78 + 8 =	71 - 8 =	51 - 8 =

$\frac{25}{8} =$	$\frac{65}{8} =$	$\frac{53}{8} =$	$\frac{18}{8} =$	$\frac{28}{8} =$	$\frac{29}{8} =$
$\frac{14}{8} =$	$\frac{23}{8} =$	$\frac{20}{8} =$	$\frac{74}{8} =$	$\frac{81}{8} =$	$\frac{61}{8} =$
$\frac{67}{8} =$	$\frac{15}{8} =$	$\frac{51}{8} =$	$\frac{8}{8} =$	$\frac{70}{8} =$	$\frac{73}{8} =$
$\frac{85}{8} =$	$\frac{86}{8} =$	$\frac{63}{8} =$	$\frac{60}{8} =$	$\frac{59}{8} =$	$\frac{69}{8} =$
$\frac{9}{8} =$	$\frac{72}{8} =$	$\frac{76}{8} =$	$\frac{16}{8} =$	$\frac{52}{8} =$	$\frac{57}{8} =$
$\frac{58}{8} =$	$\frac{50}{8} =$	$\frac{27}{8} =$	$\frac{79}{8} =$	$\frac{84}{8} =$	$\frac{83}{8} =$
$\frac{12}{8} =$	$\frac{64}{8} =$	$\frac{62}{8} =$	$\frac{13}{8} =$	$\frac{26}{8} =$	$\frac{71}{8} =$
$\frac{77}{8} =$	$\frac{22}{8} =$	$\frac{80}{8} =$	$\frac{55}{8} =$	$\frac{75}{8} =$	$\frac{54}{8} =$
$\frac{21}{8} =$	$\frac{10}{8} =$	$\frac{68}{8} =$	$\frac{24}{8} =$	$\frac{17}{8} =$	$\frac{66}{8} =$
$\frac{82}{8} =$	$\frac{19}{8} =$	$\frac{56}{8} =$	$\frac{11}{8} =$	$\frac{78}{8} =$	$\frac{87}{8} =$

COUNTING BY NINES.

0	1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35
36	37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52	53
54	55	56	57	58	59	60	61	62
63	64	65	66	67	68	69	70	71
72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98

$2 \times 9 =$	$\frac{18}{9} =$	
$3 \times 9 =$		$\frac{63}{9} =$
$4 \times 9 =$	$\frac{27}{9} =$	
$5 \times 9 =$		$\frac{72}{9} =$
$6 \times 9 =$	$\frac{36}{9} =$	
$7 \times 9 =$		$\frac{81}{9} =$
$8 \times 9 =$	$\frac{45}{9} =$	
$9 \times 9 =$		$\frac{90}{9} =$
$10 \times 9 =$	$\frac{54}{9} =$	

$3 \times 9 =$	$2 \times 9 =$	$7 \times 9 =$	$\frac{54}{9} =$	$\frac{45}{9} =$	$\frac{72}{9} =$
$6 \times 9 =$	$10 \times 9 =$	$5 \times 9 =$	$\frac{81}{9} =$	$\frac{18}{9} =$	$\frac{36}{9} =$
$9 \times 9 =$	$4 \times 9 =$	$8 \times 9 =$	$\frac{27}{9} =$	$\frac{90}{9} =$	$\frac{63}{9} =$

$29 + 9 =$	$78 + 9 =$	$86 + 9 =$	$1 + 9 =$
$87 + 9 =$	$20 + 9 =$	$21 + 9 =$	$85 + 9 =$
$33 + 9 =$	$7 + 9 =$	$73 + 9 =$	$37 + 9 =$
$6 + 9 =$	$36 + 9 =$	$8 + 9 =$	$24 + 9 =$
$77 + 9 =$	$88 + 9 =$	$19 + 9 =$	$3 + 9 =$
$89 + 9 =$	$23 + 9 =$	$74 + 9 =$	$72 + 9 =$
$4 + 9 =$	$39 + 9 =$	$9 + 9 =$	$81 + 9 =$
$25 + 9 =$	$80 + 9 =$	$35 + 9 =$	$69 + 9 =$
$38 + 9 =$	$12 + 9 =$	$22 + 9 =$	$76 + 9 =$
$79 + 9 =$	$75 + 9 =$	$84 + 9 =$	$2 + 9 =$
$82 + 9 =$	$83 + 9 =$	$15 + 9 =$	$13 + 9 =$
$31 + 9 =$	$70 + 9 =$	$71 + 9 =$	$30 + 9 =$
$17 + 9 =$	$26 + 9 =$	$32 + 9 =$	$14 + 9 =$
$10 + 9 =$	$11 + 9 =$	$18 + 9 =$	$28 + 9 =$
$34 + 9 =$	$27 + 9 =$	$5 + 9 =$	$16 + 9 =$

36 - 9 =	78 - 9 =	28 - 9 =	29 - 9 =
75 - 9 =	14 - 9 =	79 - 9 =	80 - 9 =
24 - 9 =	82 - 9 =	94 - 9 =	71 - 9 =
83 - 9 =	19 - 9 =	9 - 9 =	27 - 9 =
11 - 9 =	81 - 9 =	77 - 9 =	86 - 9 =
74 - 9 =	97 - 9 =	16 - 9 =	30 - 9 =
98 - 9 =	26 - 9 =	73 - 9 =	95 - 9 =
18 - 9 =	38 - 9 =	32 - 9 =	23 - 9 =
76 - 9 =	34 - 9 =	20 - 9 =	70 - 9 =
39 - 9 =	93 - 9 =	96 - 9 =	72 - 9 =
84 - 9 =	17 - 9 =	87 - 9 =	85 - 9 =
15 - 9 =	31 - 9 =	25 - 9 =	33 - 9 =
37 - 9 =	22 - 9 =	89 - 9 =	21 - 9 =
91 - 9 =	90 - 9 =	92 - 9 =	88 - 9 =
12 - 9 =	13 - 9 =	10 - 9 =	35 - 9 =

$\frac{74}{9} =$	$\frac{86}{9} =$	$\frac{21}{9} =$	$\frac{9}{9} =$	$\frac{70}{9} =$	$\frac{15}{9} =$
$\frac{11}{9} =$	$\frac{97}{9} =$	$\frac{80}{9} =$	$\frac{20}{9} =$	$\frac{36}{9} =$	$\frac{76}{9} =$
$\frac{95}{9} =$	$\frac{10}{9} =$	$\frac{92}{9} =$	$\frac{29}{9} =$	$\frac{27}{9} =$	$\frac{38}{9} =$
$\frac{77}{9} =$	$\frac{33}{9} =$	$\frac{73}{9} =$	$\frac{72}{9} =$	$\frac{22}{9} =$	$\frac{94}{9} =$
$\frac{28}{9} =$	$\frac{89}{9} =$	$\frac{34}{9} =$	$\frac{13}{9} =$	$\frac{18}{9} =$	$\frac{88}{9} =$
$\frac{19}{9} =$	$\frac{26}{9} =$	$\frac{29}{9} =$	$\frac{90}{9} =$	$\frac{85}{9} =$	$\frac{79}{9} =$
$\frac{93}{9} =$	$\frac{98}{9} =$	$\frac{87}{9} =$	$\frac{31}{9} =$	$\frac{91}{9} =$	$\frac{25}{9} =$
$\frac{14}{9} =$	$\frac{37}{9} =$	$\frac{35}{9} =$	$\frac{82}{9} =$	$\frac{32}{9} =$	$\frac{71}{9} =$
$\frac{17}{9} =$	$\frac{12}{9} =$	$\frac{78}{9} =$	$\frac{16}{9} =$	$\frac{24}{9} =$	$\frac{84}{9} =$
$\frac{96}{9} =$	$\frac{81}{9} =$	$\frac{39}{9} =$	$\frac{75}{9} =$	$\frac{83}{9} =$	$\frac{23}{9} =$

NUMBERS FROM 101 TO 999.

One hundred and one	101
One hundred and two	102
One hundred and three	103
One hundred and four	104
One hundred and five	105
One hundred and six	106
One hundred and seven	107
One hundred and eight	108
One hundred and nine	109
One hundred and ten	110
One hundred and eleven	111
One hundred and twelve	112
One hundred and twenty	120
One hundred and thirty	130
One hundred and forty	140
One hundred and fifty	150
One hundred and sixty	160
One hundred and seventy	170
One hundred and eighty	180
One hundred and ninety	190
Two hundred	200
Three hundred	300
Four hundred	400
Five hundred	500
Six hundred	600
Seven hundred	700
Eight hundred	800
Nine hundred	900
Nine hundred and one	901
Nine hundred and five	905
Nine hundred and ten	910
Nine hundred and forty	940
Nine hundred and ninety	990
Nine hundred and ninety-four	994
Nine hundred and ninety-nine	999

MULTIPLICATION BY 11 AND 12.

$11 \times 2 = 22$

$11 \times 3 = 33$

$11 \times 4 = 44$

$12 \times 2 = 24$

$12 \times 3 = 36$

$12 \times 4 = 48$

$11 \times 5 = 55$

$11 \times 6 = 66$

$11 \times 7 = 77$

$12 \times 5 = 60$

$12 \times 6 = 72$

$12 \times 7 = 84$

$11 \times 8 = 88$

$11 \times 9 = 99$

$11 \times 10 = 110$

$12 \times 8 = 96$

$12 \times 9 = 108$

$12 \times 10 = 120$

$2 \times 11 = 22$

$2 \times 12 = 24$

$3 \times 11 = 33$

$3 \times 12 = 36$

$4 \times 11 = 44$

$4 \times 12 = 48$

$5 \times 11 = 55$

$5 \times 12 = 60$

$6 \times 11 = 66$

$6 \times 12 = 72$

$7 \times 11 = 77$

$7 \times 12 = 84$

$8 \times 11 = 88$

$8 \times 12 = 96$

$9 \times 11 = 99$

$9 \times 12 = 108$

$10 \times 11 = 110$

$10 \times 12 = 120$

$11 \times 11 = 121$

$11 \times 12 = 132$

$12 \times 11 = 132$

$12 \times 12 = 144$

MULTIPLICATION TABLE.

	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

If we wish to find 6×4 from the table, we look for 6 in the first column and 4 in the upper row. The number in the same row with 6 and the same column with 4 is 24. $24 = 6 \times 4$.

To find 9×8 , we look for 9 in the first column, follow the row of which 9 is the first number until we come to the number in the same column with 8 in the upper row. $72 = 9 \times 8$.

EXERCISES IN ADDITION, SUBTRACTION, MULTIPLICATION, AND DIVISION.

ADD.

First, begin at the bottom of each column. Then, to test the work, begin at the top and add downward. Thus, for the first of the problems below, say: Fourteen, fifteen, twenty-three, twenty-nine, thirty-two. Nine, seventeen, eighteen, twenty-five, thirty-two.

3	1	5	2	8	2	7	6	9	5
6	3	2	5	7	7	9	8	3	4
8	4	5	4	3	1	4	6	6	4
1	5	7	7	2	9	1	2	2	4
7	9	9	1	2	6	3	1	9	7
7	3	4	3	8	4	2	8	7	8
<hr/>									
2	5	3	5	6	2	4	3	1	6
3	6	9	1	0	7	8	6	2	4
0	8	3	3	6	8	7	6	3	3
7	9	6	9	9	1	4	7	9	6
1	5	0	1	7	4	4	2	4	5
7	0	7	2	2	5	8	9	5	7
2	4	7	4	0	5	7	4	8	3
4	8	4	7	9	3	5	7	0	3
1	2	9	6	8	1	9	2	7	0
3	5	2	5	3	2	8	8	6	7
<hr/>									

SUBTRACT

the lower of each of the following sets of numbers from the upper. Thus, *seventeen minus eight equals nine*. Test, *nine plus eight equals seventeen*.

$$\begin{array}{r} 17 \\ 8 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 56 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 89 \\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 43 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 21 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 62 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 44 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 13 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 17 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 56 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 41 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 18 \\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 23 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 34 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 97 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 43 \\ 5 \\ \hline \end{array}$$

MULTIPLY

$$\begin{array}{r} 9 \\ 7 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 3 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ 11 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 8 \\ \hline \end{array}$$

DIVIDE

$$\begin{array}{r} 4 \overline{)37} \\ 9\frac{1}{4} \end{array}$$

$$9 \overline{)62}$$

$$8 \overline{)63}$$

$$5 \overline{)31}$$

$$6 \overline{)42}$$

$$12 \overline{)51}$$

$$9 \overline{)86}$$

$$4 \overline{)43}$$

$$3 \overline{)26}$$

$$8 \overline{)67}$$

$$2 \overline{)11}$$

$$6 \overline{)58}$$

$$11 \overline{)41}$$

$$7 \overline{)83}$$

$$8 \overline{)52}$$

$$5 \overline{)46}$$

$$12 \overline{)79}$$

$$7 \overline{)24}$$

What is especially needed at this stage is the ability to add single columns with ease and accuracy. The following examples will indicate the way to use the Practice Table on Page 38, for drill in addition.

ADD

The first ten numbers in column *a*.

The first twelve in column *b*.

From 5 to 20, inclusive, in column *g*.

10 to 14, *x*. That is, what is $6 + 9 + 8 + 6 + 9$?

15 to 25, *z*.

The first six numbers in Line 3, each figure being taken to represent a number. That is, what is $9 + 1 + 3 + 6 + 1 + 9$?

From *a* to *l*, inclusive, in Line 5.

e to *p*, 10.

j to *y*, 20.

NOTE. — After the pupil can do anything in addition, subtraction, multiplication, and division, which does not call for *carrying* or *reducing* from a higher denomination to a lower, he is ready for the advanced book, NUMBERS, AND HOW TO USE THEM: BY THE NATURAL METHOD.

PRACTICE TABLE.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>	<i>t</i>	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>	<i>y</i>	<i>z</i>
1	8	1	7	5	2	7	4	4	2	3	8	5	4	7	9	2	3	5	1	6	3	4	8	6	3	2
2	5	4	8	7	1	9	6	1	5	2	3	2	6	8	1	8	7	3	5	8	5	1	7	4	8	3
3	9	1	3	6	1	9	5	3	1	7	1	7	2	3	6	8	5	3	8	6	2	1	8	2	7	3
4	3	9	2	1	7	8	4	9	1	3	9	6	2	4	3	6	9	6	2	5	3	8	6	2	8	4
5	3	1	2	5	2	4	4	5	4	9	5	7	6	9	3	2	9	9	1	4	3	1	4	1	7	6
6	5	7	2	3	3	6	9	2	8	6	8	6	7	9	8	6	1	4	9	4	3	5	2	6	5	5
7	7	5	3	4	8	8	9	3	1	5	1	9	8	6	5	3	7	9	5	3	6	1	4	3	6	7
8	9	6	7	3	7	2	9	9	6	5	3	1	7	3	6	3	5	8	2	9	7	8	9	6	8	2
9	1	2	8	5	8	2	3	6	2	6	4	3	3	9	6	4	2	6	3	2	3	7	4	4	7	8
10	8	6	1	1	9	4	2	6	5	8	4	4	5	9	5	5	4	1	5	4	2	3	2	9	8	1
11	4	5	5	9	2	6	4	9	8	2	4	7	6	7	1	8	3	6	9	4	6	8	3	6	4	3
12	2	7	6	9	1	4	5	4	3	5	9	9	1	5	3	2	2	9	6	2	3	5	7	8	3	1
13	8	5	2	9	3	6	7	7	4	5	3	1	1	2	4	8	6	7	7	2	5	2	2	9	8	6
14	7	5	4	8	3	3	6	4	2	5	4	2	4	3	4	6	7	5	9	5	7	1	2	6	4	7
15	2	9	9	8	1	9	5	8	1	9	7	9	2	1	6	9	2	9	3	5	7	3	5	6	5	3
16	2	6	8	1	8	1	4	3	8	6	1	7	6	9	5	5	7	2	8	9	4	1	6	8	6	5
17	5	9	6	7	2	6	3	9	1	7	8	9	1	2	6	4	7	7	9	9	7	1	9	3	6	2
18	2	6	7	1	8	4	5	8	9	3	3	2	5	7	5	6	5	6	4	8	7	3	9	4	8	8
19	6	8	3	8	5	3	1	7	3	6	2	2	4	2	9	4	5	1	6	7	6	4	7	1	5	3
20	7	8	6	1	5	1	7	8	1	6	1	3	4	6	4	8	5	5	5	9	2	7	9	3	5	6
21	9	4	6	5	4	9	7	5	8	6	4	6	2	3	1	9	1	3	3	8	5	4	5	7	8	2
22	9	7	4	2	7	8	3	2	6	7	9	6	9	2	3	2	1	7	4	5	5	3	2	6	1	8
23	2	6	5	9	1	2	6	8	3	1	6	3	6	2	3	1	2	3	3	4	9	7	5	7	9	9
24	5	1	2	2	8	9	8	4	9	7	9	5	6	2	7	5	8	9	8	3	5	3	6	4	4	9
25	7	2	7	5	4	6	7	1	1	9	8	6	9	3	4	9	2	3	1	3	9	2	9	7	2	7

THE END.

